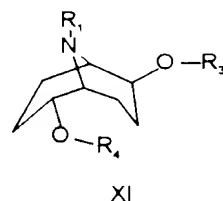
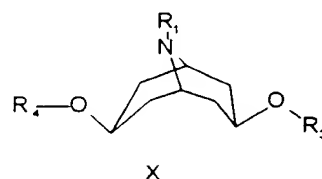
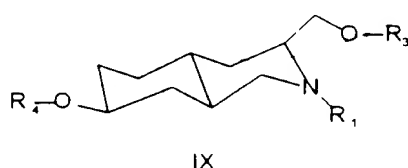
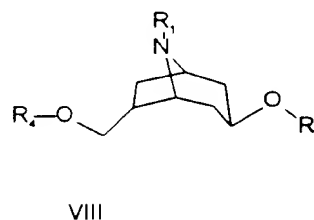
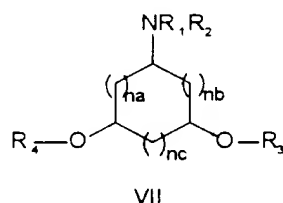
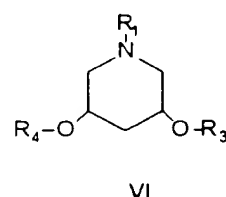
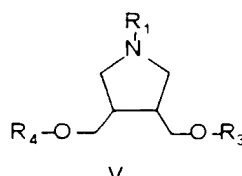
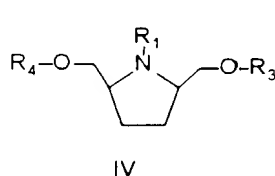
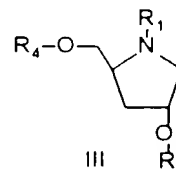
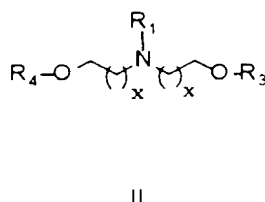
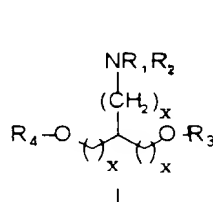


## WHAT IS CLAIMED IS:

1. An oligomeric compound comprising a plurality of aminodiols monomer subunits joined by linking groups, wherein each of said aminodiols monomer subunits has one of the structures I, II, III, IV, V, VI, VII, VIII, IX, X, or XI;



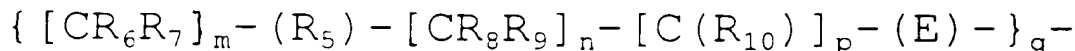
wherein:

each x is, independently, 0 to 5;

na, nb and nc are each, independently, 0 to 2, where the sum of na, nb and nc is from 1 to 5;

10 R<sub>1</sub> is -T-L or a base labile protecting group;

T is a single bond, a methylene group or a group having formula:



wherein:

5  $R_{10}$  is =O, =S, or =NR<sub>11</sub>;

$R_5$  and E, independently, are a single bond, CH=CH, C≡C, O, S, NR<sub>11</sub>, or C<sub>1</sub>-C<sub>14</sub> aryl;

each  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  are, independently, H, alkyl or haloalkyl having 1 to about 10 carbon atoms, alkenyl having 2 to about 10 carbon atoms, alkynyl having 2 to about 10 carbon atoms, or aryl having 7 to about 14 carbon atoms;

m and n, independently, are 0 to 5;

p is 0 or 1;

15 q is 1 to about 10;

L is H, substituted or unsubstituted C<sub>1</sub>-C<sub>10</sub> alkyl, substituted or unsubstituted C<sub>1</sub>-C<sub>10</sub> alkenyl, substituted or unsubstituted C<sub>1</sub>-C<sub>10</sub> alkynyl, substituted or unsubstituted C<sub>4</sub>-C<sub>7</sub> carbocyclic alkyl, substituted or unsubstituted C<sub>4</sub>-C<sub>7</sub> carbocyclic alkenyl, substituted or unsubstituted C<sub>4</sub>-C<sub>7</sub> carbocyclic alkynyl, substituted or unsubstituted C<sub>6</sub>-C<sub>14</sub> aryl, an ether having 2 to 10 carbon atoms and 1 to 4 oxygen or sulfur atoms, a nitrogen containing heterocycle, a sulfur containing heterocycle, an oxygen containing heterocycle, a metal coordination group, a conjugate group, halogen, hydroxyl (OH), thiol (SH), keto (C=O), carboxyl (COOH), amide (CONR<sub>12</sub>), amidine (C(=NH)NR<sub>12</sub>R<sub>13</sub>), guanidine (NHC(=NH)NR<sub>12</sub>R<sub>13</sub>), glutamyl (R<sub>12</sub>OOCCH(NR<sub>12</sub>R<sub>13</sub>)(CH<sub>2</sub>)<sub>2</sub>C(=O)), nitrate (ONO<sub>2</sub>), nitro (NO<sub>2</sub>), nitrile (CN), trifluoromethyl (CF<sub>3</sub>), trifluoromethoxy (OCF<sub>3</sub>), O-alkyl, S-alkyl, NH-alkyl, N-dialkyl, O-aralkyl, S-aralkyl, NH-aralkyl, amino (NH<sub>2</sub>), azido (N<sub>3</sub>), hydrazino (NHNH<sub>2</sub>), hydroxylamino (ONH<sub>2</sub>), sulfoxide (SO), sulfone (SO<sub>2</sub>),

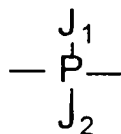
- 154 -

sulfide (S-), disulfide (S-S), silyl, a nucleosidic base, an amino acid side chain, a carbohydrate, a biopharmaceutically active moiety, or group capable of hydrogen bonding where the substituent groups are selected from hydroxyl, amino, alkoxy, alcohol, benzyl, phenyl, nitro, thiol, thioalkoxy, halogen, alkyl, aryl, alkenyl, and alkynyl groups;

$R_2$  is hydrogen or  $C_1-C_{10}$  alkyl;

$R_3$  and  $R_4$  are independently hydrogen, an acid labile hydroxyl protecting group, a linking group or a

conjugate group, wherein said linking group has the formula:



wherein:

$J_1$  is =O or =S;

$J_2$  is OH or  $N(Y_0)T_0$ ;

$Y_0$  is H or  $[Q_1]_j-Z_1$ ;

$T_0$  is  $[Q_1]_k-Z_1$ , or together  $Y_0$  and  $T_0$  are joined in a nitrogen heterocycle;

$Q_1$  and  $Q_2$  independently are  $C_1-C_{10}$  alkyl,  $C_1-C_{10}$  alkenyl,  $C_1-C_{10}$  alkynyl,  $C_4-C_7$  carbocyclo alkyl  $C_4-C_7$  carbocyclo alkenyl, a heterocycle, an ether having 2 to 10 carbon atoms and 1 to 4 oxygen or sulfur atoms, a polyalkyl glycol, or  $C_7-C_{14}$  aralkyl;

$j$  and  $k$  independently are 0 or 1;

$Z_1$  and  $Z_2$  independently are H,  $C_1-C_6$  alkyl,  $C_1-C_{10}$  alkenyl,  $C_1-C_{20}$  alkynyl,  $C_6-C_{14}$  aryl,  $C_7-C_{15}$  aralkyl, halogen,  $CH=O$ ,  $OR_{12}$ ,  $SR_{12}$ ,  $NR_{12}R_{13}$ ,  $C(=NH)NR_{12}R_{13}$ ,  $CH(NR_{12}R_{13})$ ,  $NHC(=NH)NR_{12}R_{13}$ ,  $CH(NH_2)C(=O)OH$ ,  $C(=O)NR_{12}R_{13}$ ,  $C(=O)OR_{12}$ , a metal coordination group, a reporter group, a nitrogen-containing heterocycle, a purine, a pyrimidine, a phosphate group, a polyether group, or a polyethylene glycol group; and

- 155 -

provided that at least one of said aminodiol monomer subunits in said oligomeric compound does not have structure III.

2. The oligomeric compound of claim 1 wherein said  $J_1$  is =O or =S and said  $J_2$  is OH.

3. The oligomeric compound of claim 1 wherein said  $J_1$  is =O, said  $J_2$  is  $N(Y_c)T_c$  and at least two of said  $N(Y_c)T_c$  are the same.

4. The oligomeric compound of claim 1 wherein said  $J_1$  is =O, said  $J_2$  is  $N(Y_c)T_c$  and wherein at least two of said  $N(Y_c)T_c$  are different.

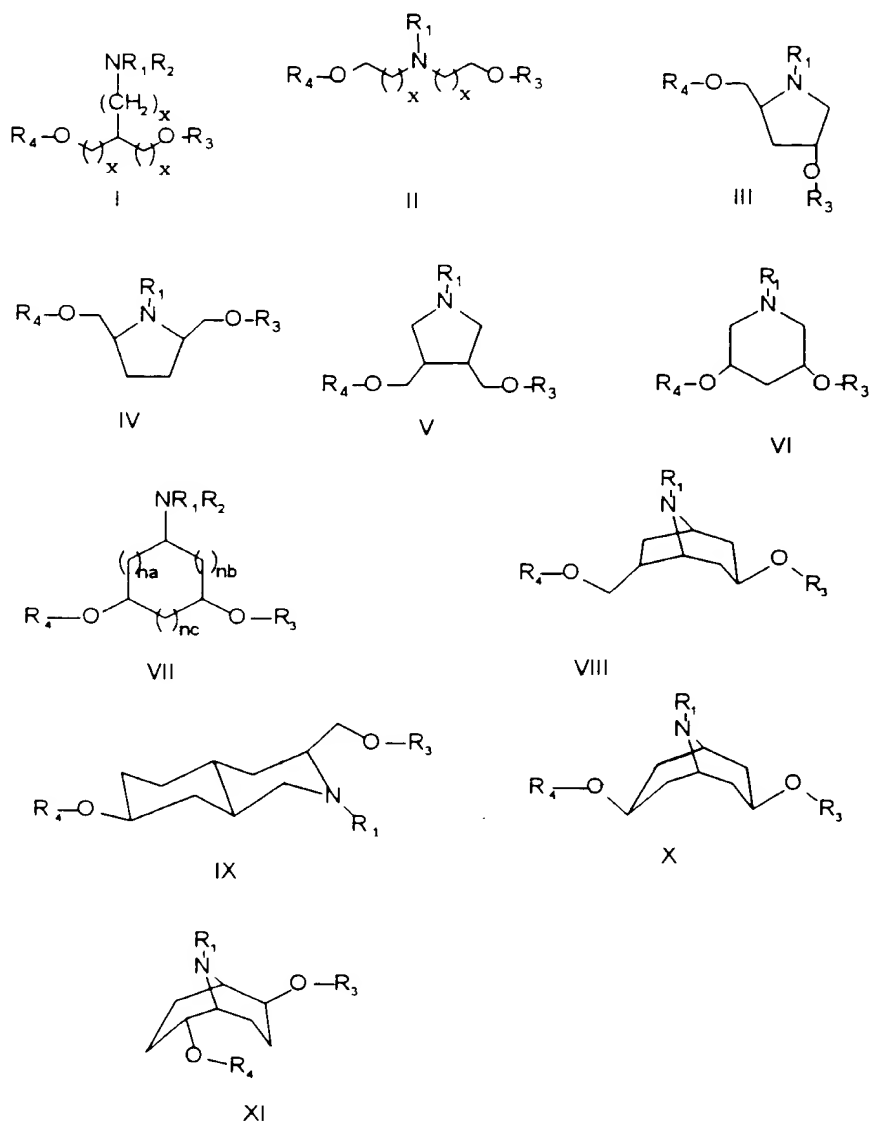
5. The oligomeric compound of claim 1 wherein each of said  $R_i$  are the same.

6. The oligomeric compound of claim 1 wherein at least two of said  $R_i$  are different.

7. The oligomeric compound of claim 1 wherein each of said aminodiol monomer subunits are the same.

8. The oligomeric compound of claim 1 wherein at least two of said aminodiol monomer subunits are different.

9. A library of oligomers, each of said oligomers comprising a plurality of aminodiols monomer subunits joined by linking groups, said aminodiols monomer subunits, each of said subunits having structure I, II, III, IV, V, VI, VII, VIII, IX, X, or XI;



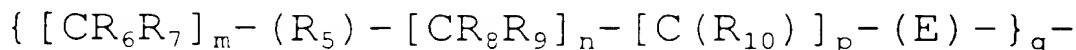
wherein:

each  $x$  is, independently, 0 to 5;

$na$ ,  $nb$  and  $nc$  are each, independently, 0 to 2, where the sum of  $na$ ,  $nb$  and  $nc$  is from 1 to 5;

10  $R_1$  is  $-T-L$  or a base labile protecting group;

T is a single bond, a methylene group or a group having formula:



5 wherein:

$R_{12}$  is =O, =S, or =NR<sub>11</sub>;

$R_5$  and E, independently, are a single bond, CH=CH, C≡C, O, S, NR<sub>11</sub>, or C<sub>6</sub>-C<sub>14</sub> aryl;

each  $R_4$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  are,  
 10 independently, H, alkyl or haloalkyl having 1 to about 10 carbon atoms, alkenyl having 2 to about 10 carbon atoms, alkynyl having 2 to about 10 carbon atoms, or aryl having 7 to about 14 carbon atoms;

m and n, independently, are 0 to 5;

15 p is 0 or 1;

q is 1 to about 10;

L is H, substituted or unsubstituted C<sub>1</sub>-C<sub>10</sub> alkyl, substituted or unsubstituted C<sub>2</sub>-C<sub>10</sub> alkenyl, substituted or unsubstituted C<sub>2</sub>-C<sub>10</sub> alkynyl, substituted or unsubstituted C<sub>4</sub>-C<sub>7</sub> carbocyclic alkyl, substituted or unsubstituted C<sub>4</sub>-C<sub>7</sub> carbocyclic alkenyl, substituted or unsubstituted C<sub>4</sub>-C<sub>7</sub> carbocyclic alkynyl, substituted or unsubstituted C<sub>6</sub>-C<sub>14</sub> aryl, an ether having 2 to 10 carbon atoms and 1 to 4 oxygen or sulfur atoms, a nitrogen containing heterocycle, a sulfur  
 25 containing heterocycle, an oxygen containing heterocycle, a metal coordination group, a conjugate group, halogen, hydroxyl (OH), thiol (SH), keto (C=O), carboxyl (COOH), amide (CONR<sub>12</sub>), amidine (C(=NH)NR<sub>12</sub>R<sub>13</sub>), guanidine (NHC(=NH)NR<sub>12</sub>R<sub>13</sub>), glutamyl (R<sub>12</sub>OOCCH(NR<sub>12</sub>R<sub>13</sub>)(CH<sub>2</sub>)<sub>2</sub>C(=O)), nitrate (ONO<sub>2</sub>), nitro (NO<sub>2</sub>), nitrile (CN), trifluoromethyl (CF<sub>3</sub>), trifluoromethoxy (OCF<sub>3</sub>), O-alkyl, S-alkyl, NH-alkyl, N-dialkyl, O-aralkyl, S-aralkyl, NH-aralkyl, amino (NH<sub>2</sub>), azido (N<sub>3</sub>), hydrazino (NHNH<sub>2</sub>), hydroxylamino (ONH<sub>2</sub>), sulfoxide (SO), sulfone (SO<sub>2</sub>),

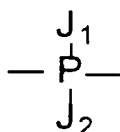
- 158 -

sulfide (S-), disulfide (S-S), silyl, a nucleosidic base, an amino acid side chain, a carbohydrate, a biopharmaceutically active moiety, or group capable of hydrogen bonding where the substituent groups are selected from hydroxyl, amino, alkoxy, alcohol, benzyl, phenyl, nitro, thiol, thioalkoxy, halogen, alkyl, aryl, alkenyl, and alkynyl groups;

$R_2$  is hydrogen or  $C_1$ - $C_{10}$  alkyl;

$R_3$  and  $R_4$  are independently hydrogen, an acid labile hydroxyl protecting group, a linking group or a

conjugate group, wherein said linking group has the formula:



wherein:

$J_1$  is =O or =S;

$J_2$  is OH or  $N(Y_0)T_0$ ;

$Y_0$  is H or  $[Q_1]_j-Z_1$ ;

$T_0$  is  $[Q_1]_k-Z_1$ , or together  $Y_0$  and  $T_0$  are joined in a nitrogen heterocycle;

$Q_1$  and  $Q_2$  independently are  $C_1$ - $C_{10}$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_2$ - $C_{10}$  alkynyl,  $C_4$ - $C_7$  carbocyclo alkyl,  $C_4$ - $C_7$  carbocyclo alkenyl, a heterocycle, an ether having 2 to 10 carbon atoms and 1 to 4 oxygen or sulfur atoms, a polyalkyl glycol, or  $C_7$ - $C_{14}$  aralkyl;

$j$  and  $k$  independently are 0 or 1;

$Z_1$  and  $Z_2$  independently are H,  $C_1$ - $C_2$  alkyl,  $C_2$ - $C_{10}$  alkenyl,  $C_2$ - $C_{10}$  alkynyl,  $C_6$ - $C_{14}$  aryl,  $C_7$ - $C_{15}$  aralkyl, halogen,  $CH=O$ ,  $OR_{12}$ ,  $SR_{12}$ ,  $NR_{12}R_{13}$ ,  $C(=NH)NR_{12}R_{13}$ ,  $CH(NR_{12}R_{13})$ ,  $NHC(=NH)NR_{12}R_{13}$ ,  $CH(NH_2)C(=O)OH$ ,  $C(=O)NR_{12}R_{13}$ ,  $C(=O)OR_{12}$ , a metal coordination group, a reporter group, a nitrogen-containing heterocycle, a purine, a pyrimidine, a phosphate group, a polyether group, or a polyethylene glycol group; and

- 159 -

provided that at least one of said aminodiol monomer subunits in each oligomeric compound of said library does not have structure III.

10. The library of claim 9 wherein said  $J_1$  is =O or =S and said  $J_2$  is OH.

11. The library of claim 9 wherein said  $J_1$  is =O, said  $J_2$  is  $N(Y_0)T_0$  and at least two of said  $N(Y_0)T_0$  are the same.

12. The library of claim 9 wherein said  $J_1$  is =O, said  $J_2$  is  $N(Y_0)T_0$  and at least two of said  $N(Y_0)T_0$  are different.

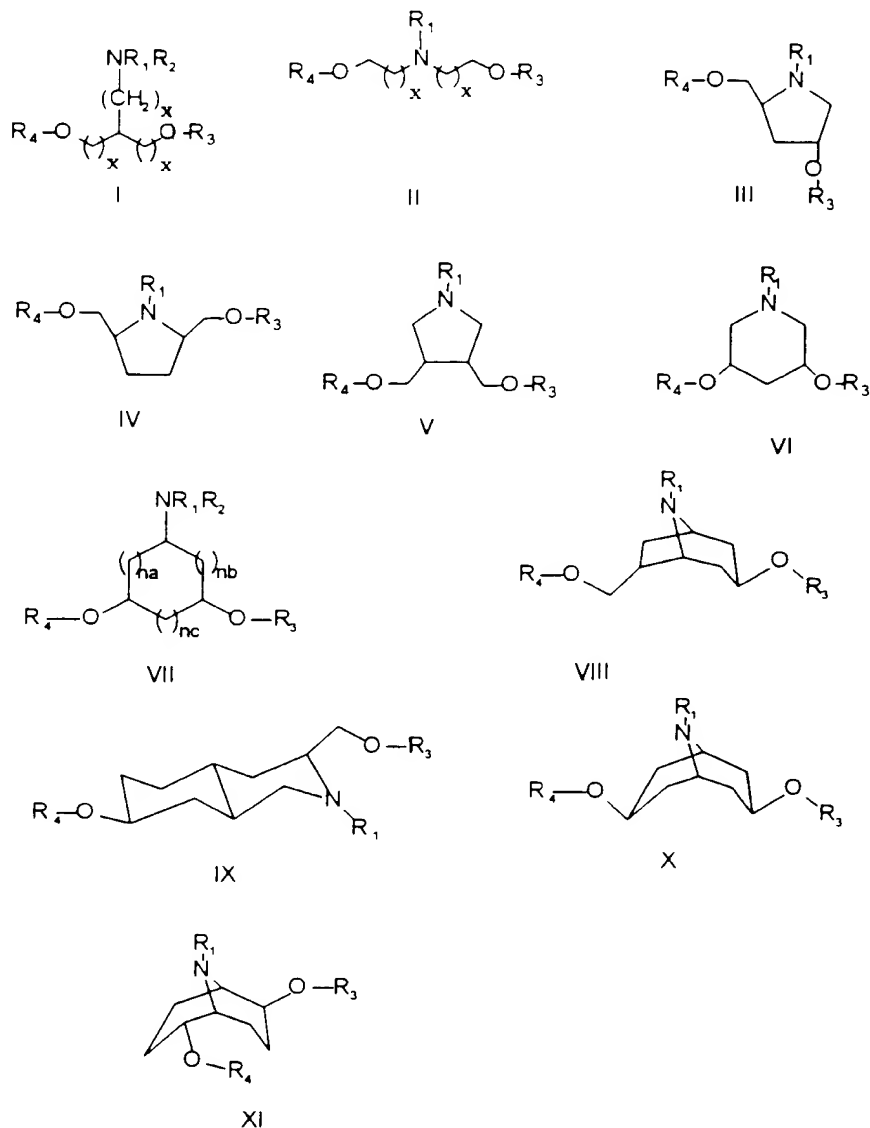
13. The library of claim 9 wherein each of said  $R_1$  is the same.

14. The library of claim 9 wherein at least two of said  $R_1$  are different.

15. A method for preparing an oligomer comprising:

(a) selecting an aminodiol monomer subunit having the structure I, II, III, IV, V, VI, VII, VIII, IX, X, or XI;

- 160 -



wherein:

each  $x$  is, independently, 0 to 5;

$na$ ,  $nb$  and  $nc$  are each, independently, 0 to 2, where the sum of  $na$ ,  $nb$  and  $nc$  is from 1 to 5;

$R_1$  is a base labile amino protecting group;

$R_2$  is hydrogen or  $C_1-C_{10}$  alkyl;

one of  $R_3$  or  $R_4$  is hydrogen or an activated phosphite group and the other of  $R_3$  or  $R_4$  is an acid labile hydroxyl protecting group;

(b) attaching said aminodiol monomer subunit to a

- 161 -

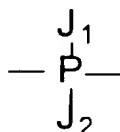
solid support to form a solid support bound aminodiol monomer subunit;

(c) treating said acid labile hydroxyl protecting group with a dilute acid to form a free hydroxyl group;

5 (d) reacting said free hydroxyl group with a further aminodiol monomer subunit having structure I, II, III, IV, V, VI, or VII, VIII, IX, X, or XI thereby forming an oligomeric compound bound to said solid support, said oligomeric compound containing a phosphite linkage;

10 (e) optionally iteratively repeating steps (c) and (d) to increase the length of the oligomeric compound bound to said solid support;

(f) optionally, prior to step (c) or after step (d) oxidizing said phosphite linkage to form a phosphate linking group wherein said linking groups are selected having formula:



wherein:

$J_1$  is =O or =S;

20  $J_2$  is OH or N(Y<sub>c</sub>)T<sub>0</sub>;

Y<sub>c</sub> is H or [Q<sub>i</sub>]<sub>j</sub>-Z<sub>c</sub>;

T<sub>0</sub> is [Q<sub>i</sub>]<sub>k</sub>-Z<sub>1</sub>, or together Y<sub>c</sub> and T<sub>0</sub> are joined in a nitrogen heterocycle;

25 Q<sub>i</sub> and Q<sub>j</sub> independently are C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>4</sub>-C<sub>7</sub> carbocyclo alkyl C<sub>4</sub>-C<sub>7</sub> carbocyclo alkenyl, a heterocycle, an ether having 2 to 10 carbon atoms and 1 to 4 oxygen or sulfur atoms, a polyalkyl glycol, or C<sub>7</sub>-C<sub>14</sub> aralkyl;

j and k independently are 0 or 1;

30 Z<sub>1</sub> and Z<sub>2</sub> independently are H, C<sub>1</sub>-C<sub>2</sub> alkyl, C<sub>2</sub>-C<sub>10</sub>

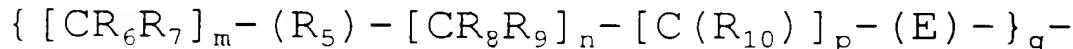
- 162 -

alkenyl,  $C_1-C_{14}$  alkynyl,  $C_1-C_{14}$  aryl,  $C_1-C_{14}$  aralkyl, halogen,  $CH=O$ ,  $OR_{12}$ ,  $SR_{12}$ ,  $NR_{12}R_{13}$ ,  $C(=NH)NR_{12}R_{13}$ ,  $CH(NR_{12}R_{13})$ ,  $NHC(=NH)NR_{12}R_{13}$ ,  $CH(NH)C(=O)OH$ ,  $C(=O)NR_{12}R_{13}$ ,  $C(=O)OR_{12}$ , a metal coordination group, a reporter group, a nitrogen-containing heterocycle, a purine, a pyrimidine, a phosphate group, a polyether group, or a polyethylene glycol group;

(g) prior to step (e) or after step (f) contacting said solid support bound aminodiols monomer subunit or said support bound oligomeric compound with a base to remove said base labile amino protecting group to form the solid support bound aminodiols monomer subunit or support bound oligomeric compound having a free amine, and derivatizing said free amine with a group of the formula:

wherein:

T is a single bond, a methylene group or a group having formula:



where:

$R_{10}$  is  $=O$ ,  $=S$ , or  $=NR_{11}$ ;

$R_5$  and  $E$ , independently, are a single bond,  $CH=CH$ ,  $C\equiv C$ ,  $O$ ,  $S$ ,  $NR_{11}$ , or  $C_1-C_{14}$  aryl;

each  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  are, independently,  $H$ , alkyl or haloalkyl having 1 to about 10 carbon atoms, alkenyl having 2 to about 10 carbon atoms, alkynyl having 2 to about 10 carbon atoms, or aryl having 7 to about 14 carbon atoms;

$m$  and  $n$ , independently, are 0 to 5;

$p$  is 0 or 1;

$q$  is 1 to about 10;

$L$  is  $H$ , substituted or unsubstituted  $C_1-C_{10}$  alkyl, substituted or unsubstituted  $C_1-C_{14}$  alkenyl, substituted or unsubstituted  $C_1-C_{14}$  alkynyl, substituted or unsubstituted  $C_1-$

- 163 -

C- carbocyclic alkyl, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub>, carbocyclic alkenyl, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub>, carbocyclic alkynyl, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub>, aryl, an ether having 2 to 10 carbon atoms and 1 to 4 oxygen or sulfur atoms, a nitrogen containing heterocycle, a sulfur containing heterocycle, an oxygen containing heterocycle, a metal coordination group, a conjugate group, halogen, hydroxyl (OH), thiol (SH), keto (C=O), carboxyl (COOH), amide (CONR<sub>1,2</sub>), amidine (C(=NH)NR<sub>1,2</sub>R<sub>1,3</sub>), guanidine (NHC(=NH)NR<sub>1,2</sub>R<sub>1,3</sub>), glutamyl (R<sub>1,2</sub>OOCCH(NR<sub>1,2</sub>R<sub>1,3</sub>)(CH<sub>2</sub>)<sub>2</sub>C(=O)), nitrate (ONO<sub>2</sub>), nitro (NO<sub>2</sub>), nitrile (CN), trifluoromethyl (CF<sub>3</sub>), trifluoromethoxy (OCF<sub>3</sub>), O-alkyl, S-alkyl, NH-alkyl, N-dialkyl, O-aralkyl, S-aralkyl, NH-aralkyl, amino (NH<sub>2</sub>), azido (N<sub>3</sub>), hydrazino (NHNH<sub>2</sub>), hydroxylamino (ONH<sub>2</sub>), sulfoxide (SO), sulfone (SO<sub>2</sub>), sulfide (S-), disulfide (S-S), silyl, a nucleosidic base, an amino acid side chain, a carbohydrate, a biopharmaceutically active moiety, or group capable of hydrogen bonding where the substituent groups are selected from hydroxyl, amino, alkoxy, alcohol, benzyl, phenyl, nitro, thiol, thioalkoxy, halogen, alkyl, aryl, alkenyl, and alkynyl groups;

(h) optionally repeating steps (c) and (d) followed by step (g) to increase the length of the oligomeric compound bound to said solid support;

(i) treating said oligomeric compound bound to said solid support with acid to deprotect any protecting groups; and

(j) cleaving said oligomeric compound from said solid support.

16. The process of claim 15 wherein said step (g) is conducted after said step (b).

17. The process of claim 15 wherein said step (g) is conducted prior to step (d) for the addition of at least one monomeric subunit to said oligomeric compound.

- 164 -

18. The process of claim 15 wherein said step (g) is conducted prior to each iteration of said step (d).

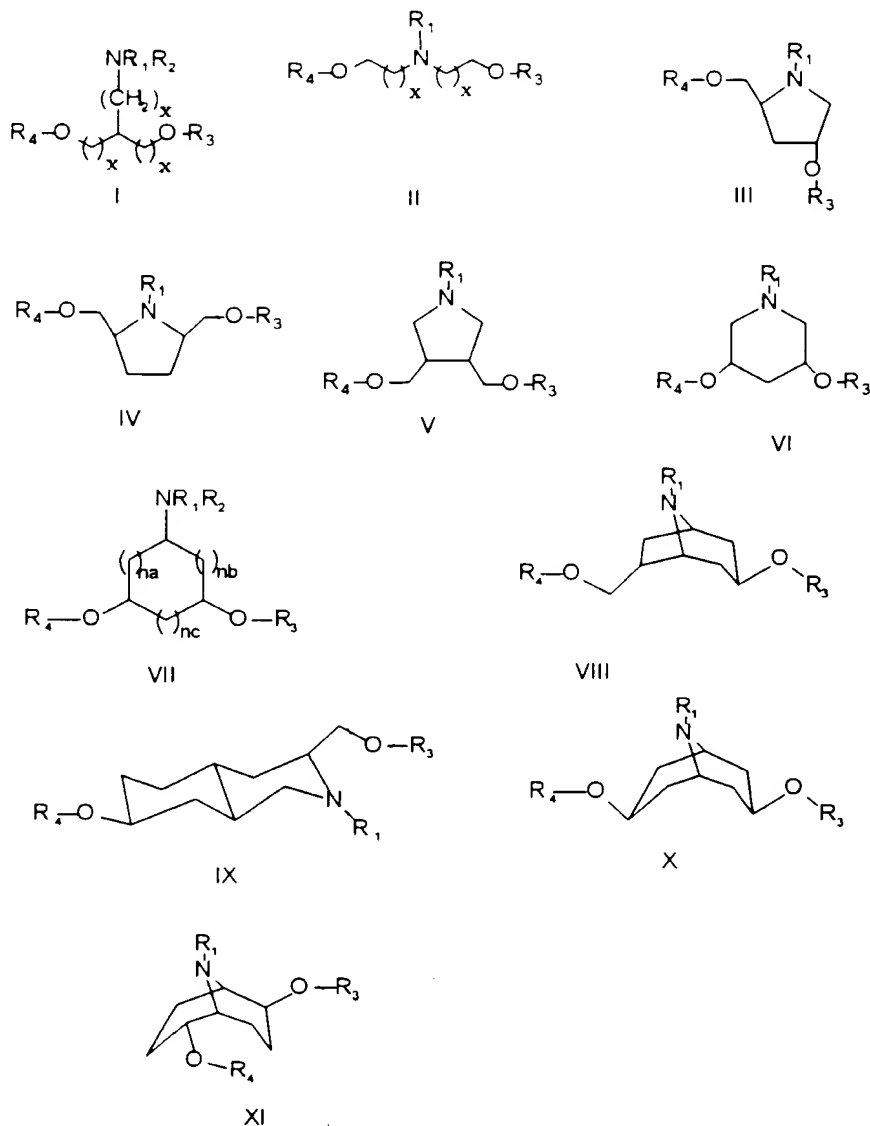
19. The process of claim 15 wherein said step (g) is conducted only after at least one iteration of said step (e).

5 20. The process of claim 15 wherein said step (g) is conducted after said step (f) for the addition of at least one monomeric subunit to said oligomeric compound.

21. A method for preparing a combinatorial library comprising:

10 (a) selecting a plurality of aminodiol monomer subunits having the structure I, II, III, IV, V, VI, VII, VIII, IX, X, or XI:

- 165 -



wherein:

each  $x$  is, independently, 0 to 5;

$na$ ,  $nb$  and  $nc$  are each, independently, 0 to 2, where the sum of  $na$ ,  $nb$  and  $nc$  is from 1 to 5;

$R_1$  is a base labile amino protecting group;

$R_2$  is hydrogen or  $C_1$ - $C_{12}$  alkyl;

one of  $R_3$  or  $R_4$  is hydrogen or an activated phosphite group and the other of  $R_3$  or  $R_4$  is an acid labile hydroxyl protecting group;

(b) attaching said aminodiol monomer subunits to a

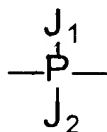
solid support to form a solid support bound aminodiol monomer subunits;

(c) treating said acid labile hydroxyl protecting groups with a dilute acid to form a free hydroxyl groups;

5 (d) reacting said free hydroxyl groups with further aminodiol monomer subunits having structure I, II, III, IV, V, VI, VII, VIII, IX, X, or XI thereby forming an oligomeric compound bound to said solid support, said oligomeric compound containing a phosphite linkage;

10 (e) optionally iteratively repeating steps (c) and (d) to increase the length of the oligomeric compound bound to said solid support;

(f) optionally, prior to step (c) or after step (d) oxidizing said phosphite linkage to form phosphate  
15 linking groups having formula:



wherein:

$J_1$  is =O or =S;

$J_2$  is OH or  $N(Y_0)T_0$ ;

20  $Y_0$  is H or  $[Q_1]_j-Z_1$ ;

$T_0$  is  $[Q_1]_k-Z_1$ , or together  $Y_0$  and  $T_0$  are joined in a nitrogen heterocycle;

$Q_1$  and  $Q_2$  independently are  $C_1-C_{10}$  alkyl,  $C_1-C_{10}$  alkenyl,  $C_1-C_{10}$  alkynyl,  $C_4-C_7$  carbocyclo alkyl  $C_4-C_7$  carbocyclo alkenyl, a heterocycle, an ether having 2 to 10 carbon atoms  
25 and 1 to 4 oxygen or sulfur atoms, a polyalkyl glycol, or  $C_1-C_{10}$  aralkyl;

$j$  and  $k$  independently are 0 or 1;

$Z_1$  and  $Z_2$  independently are H,  $C_1-C_{10}$  alkyl,  $C_1-C_{10}$  alkenyl,  $C_1-C_{10}$  alkynyl,  $C_1-C_{10}$  aryl,  $C_1-C_{10}$  aralkyl, halogen,  
30

- 167 -

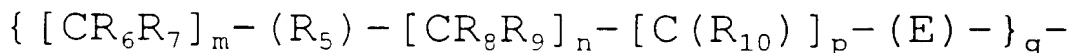
CH=O,  $\text{OR}_{11}$ ,  $\text{SR}_{11}$ ,  $\text{NR}_{11}\text{R}_{13}$ ,  $\text{C}(=\text{NH})\text{NR}_{11}\text{R}_{13}$ ,  $\text{CH}(\text{NR}_{11}\text{R}_{13})$ ,  
 $\text{NHC}(=\text{NH})\text{NR}_{11}\text{R}_{13}$ ,  $\text{CH}(\text{NH})\text{C}(=\text{O})\text{OH}$ ,  $\text{C}(=\text{O})\text{NR}_{11}\text{R}_{13}$ ,  $\text{C}(=\text{O})\text{OR}_{11}$ , a metal  
 coordination group, a reporter group, a nitrogen-containing  
 heterocycle, a purine, a pyrimidine, a phosphate group, a  
 5 polyether group, or a polyethylene glycol group;

(g) prior to step (e) or after step (f) contacting  
 said solid support bound aminodiol monomer subunits or said  
 support bound oligomeric compounds with a base to remove said  
 base labile amino protecting groups to form the solid support  
 10 bound aminodiol monomer subunits or support bound oligomeric  
 compounds having a free amine, and derivatizing said free  
 amine with a group of the formula

$$-\text{T}-\text{L}$$

wherein:

15 T is a single bond, a methylene group or a group  
 having formula:



where:

20  $\text{R}_{10}$  is =O, =S, or =NR<sub>11</sub>;  
 $\text{R}_5$  and E, independently, are a single bond, CH=CH,  
 C≡C, O, S, NR<sub>11</sub>, or C<sub>6</sub>-C<sub>14</sub> aryl;

each  $\text{R}_6$ ,  $\text{R}_7$ ,  $\text{R}_8$ ,  $\text{R}_9$ ,  $\text{R}_{11}$ ,  $\text{R}_{12}$  and  $\text{R}_{13}$  are,  
 independently, H, alkyl or haloalkyl having 1 to about 10  
 25 carbon atoms, alkenyl having 2 to about 10 carbon atoms,  
 alkynyl having 2 to about 10 carbon atoms, or aryl having 7  
 to about 14 carbon atoms;

m and n, independently, are 0 to 5;

p is 0 or 1;

30 q is 1 to about 10;

L is H, substituted or unsubstituted C<sub>1</sub>-C<sub>10</sub> alkyl,  
 substituted or unsubstituted C<sub>2</sub>-C<sub>10</sub> alkenyl, substituted or  
 unsubstituted C<sub>2</sub>-C<sub>10</sub> alkynyl, substituted or unsubstituted C<sub>1</sub>-

C. carbocyclic alkyl, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub>-  
carbocyclic alkenyl, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub>-  
carbocyclic alkynyl, substituted or unsubstituted C<sub>1</sub>-C<sub>6</sub>, aryl,  
an ether having 2 to 10 carbon atoms and 1 to 4 oxygen or  
5 sulfur atoms, a nitrogen containing heterocycle, a sulfur  
containing heterocycle, an oxygen containing heterocycle, a  
metal coordination group, a conjugate group, halogen, hydrox-  
yl (OH), thiol (SH), keto (C=O), carboxyl (COOH), amide  
(CONR<sub>1,2</sub>), amidine (C(=NH)NR<sub>1,2</sub>R<sub>1,3</sub>), guanidine (NHC(=NH)NR<sub>1,2</sub>R<sub>1,3</sub>),  
10 glutamyl (R<sub>1,2</sub>OOCCH(NR<sub>1,2</sub>R<sub>1,3</sub>)(CH<sub>2</sub>)<sub>2</sub>C(=O)), nitrate (ONO<sub>2</sub>), nitro  
(NO<sub>2</sub>), nitrile (CN), trifluoromethyl (CF<sub>3</sub>), trifluoromethoxy  
(OCF<sub>3</sub>), O-alkyl, S-alkyl, NH-alkyl, N-dialkyl, O-aralkyl, S-  
aralkyl, NH-aralkyl, amino (NH<sub>2</sub>), azido (N<sub>3</sub>), hydrazino  
(NHNH<sub>2</sub>), hydroxylamino (ONH<sub>2</sub>), sulfoxide (SO), sulfone (SO<sub>2</sub>),  
15 sulfide (S-), disulfide (S-S), silyl, a nucleosidic base, an  
amino acid side chain, a carbohydrate, a biopharmaceutically  
active moiety, or group capable of hydrogen bonding where the  
substituent groups are selected from hydroxyl, amino, alkoxy,  
alcohol, benzyl, phenyl, nitro, thiol, thioalkoxy, halogen,  
20 alkyl, aryl, alkenyl, and alkynyl groups;

(h) optionally repeating steps (c) and (d)  
followed by step (g) to increase the length of the oligomeric  
compounds bound to said solid support;

(h) treating said oligomeric compounds bound to  
25 said solid support with acid to deprotect any protecting  
groups; and

(i) cleaving said oligomeric compounds from said  
solid support.

22. The process of claim 21 wherein said step (g) is  
30 conducted after said step (b).

23. The process of claim 21 wherein said step (g) is  
conducted prior to step (e) for the addition of at least one  
monomeric subunit to each of said oligomeric compounds.

- 169 -

24. The process of claim 21 wherein said step (g) is conducted prior to each iteration of said step (e).

25. The process of claim 21 wherein said step (g) is conducted only after at least one iteration of said step (e).

5 26. The process of claim 21 wherein said step (g) is conducted after said step (f) for the addition of at least one monomeric subunit to each of said oligomeric compounds.

ADD  
E2